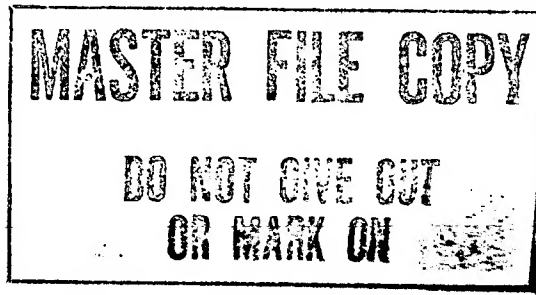




**Intelligence
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Are Large Oil Price Declines Sustainable?

**National Intelligence Council
Memorandum**

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**National Intelligence Council
Memorandum**

This Memorandum was prepared by Maurice
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Are Large Oil Price Declines Sustainable?

This paper examines hypothetically the impact of several alternative price scenarios on the oil market—\$33, \$30, \$25, \$20, and \$15 a barrel—to determine how sustainable these prices might be over the next three years, given likely reactions in the oil market and the policies of the governments of oil-exporting countries.

The analytical approach uses a mix of judgment and econometric relationships. The framework of analysis is a straightforward accounting process in which the role of each factor affecting the oil market can be distinguished and the sensitivity of the overall results to different judgments can be tested. Econometric findings were used to project particular relationships, but alternative projections were made to accommodate a broader range of judgments. Where feasible, results were checked for reasonableness.

Are Large Oil Price Declines Sustainable?

Key Judgments

*Information available
as of April 1983
was used in this
memorandum.*

Oil prices will probably settle around \$25 to \$29 per barrel for several years because Saudi Arabia appears to have both the will and, with limited help from other OPEC countries, the ability to support prices in this range. Prices under \$25 are unlikely to be sustained for more than two years because the price decline would induce a substantial increase in the demand for oil unless consuming country governments were willing to tax away a substantial part of the economic benefits from the oil price declines. Higher oil demand would result from the stimulative impact of lower oil prices on economic growth and the reduced incentive to conserve energy and substitute oil for other energy sources. To sustain the various oil price levels in the next three years or so would require:

For a \$33 price

- Broad OPEC cartel action to limit production; **and**
- Continuation of the Iran-Iraq war.

For a \$30 (or \$29) price

- Some limitation of production outside the Southern Gulf; **and**
- Continuation of the Iran-Iraq war; **or**
- Broad OPEC cartel action.

For a \$25 price

- Some limitation of production outside the southern Gulf if the war ends.

For a \$20 price

- A willingness by the southern Gulf countries to expand their oil exports in the face of large revenue shortfalls in other OPEC countries.

For a \$15 price

- An all-out expansion of oil production and productive capacity in the southern Gulf.

Are Large Oil Price Declines Sustainable?

Analysis

There is a reasonable chance that the oil reference price of \$29 per barrel, agreed on at the recent OPEC meeting, will hold at least until the Iran-Iraq war ends. The Saudis will need production restraints in a few other OPEC countries, although not the cooperation of all of OPEC to sustain their output even at present minimal levels, until oil demand begins to recover. Continuing declines in oil demand, noncooperation elsewhere in OPEC, or an end to the Iran-Iraq war, however, could put such pressure on the Saudis as to trigger an all-out oil price war. This is an unlikely but by no means inconceivable possibility. The question is, how far below \$29 per barrel prices might fall and how sustainable various prices might prove to be?

Currently, large excess capacity exists in most of the OPEC countries. Not all this excess capacity needs to be used, however, before upward price pressure on the oil market begins because Saudi Arabia, Kuwait, and the other southern Gulf countries would prefer to produce well below capacity and may be willing to accept relatively low production to stabilize the price of oil at a level they believe to be consistent with long-term market trends and their own long-term conservation objectives. We have information that indicates the Saudis regard an oil price in the \$25 to \$30 range as appropriate.

Our analysis of the various factors affecting the oil demand and supply of non-Communist countries at various assumed oil price levels yields the following implications for the different groups in OPEC (see table 1):

- A price of \$33 per barrel (the 1982 average) would probably result in no change in the demand for OPEC oil through 1985. There would not be enough demand for OPEC oil to satisfy the needs of the principal OPEC members. Even if the Iran-Iraq war continued, the OPEC members outside the southern

Gulf could not produce near capacity levels without pushing down production in the southern Gulf to the range of 6-7 million barrels per day (b/d), below the low point reached in February and obviously an unacceptable production rate for any length of time. To meet what the southern Gulf countries would consider to be their minimum needs, other OPEC countries would have to limit output—in other words, OPEC would have to work as a cartel. Although this is a possibility, the odds clearly are against sustaining a cartel agreement for long. Consequently, there would be strong pressure for a price decline. An end to the Iran-Iraq war would make a difficult situation virtually impossible.

- A \$30 per barrel price, or the slightly lower prices consistent with the OPEC agreement on a \$29 base price, will be difficult to sustain without limitation of production in some countries outside the southern Gulf. Without such cooperation, southern Gulf output by 1985 would be 3 million b/d or less below the 1982 level, a situation that would create much strain in OPEC. Full operation of OPEC as a cartel would not be necessary, however. With an end to the war, broad OPEC cooperation would become essential to sustain the price.
- With a \$25 per barrel price oil demand would almost certainly increase enough to bring OPEC countries outside the Middle East to near capacity production and, in addition, would probably cover part of the potential increase in production from Iraq and Iran if their war should end. Consequently, the southern Gulf countries would be able to increase their production if the Iran-Iraq war continued and, with only small restraint from others, might be able to maintain it if it ended. If necessary, the Saudis could probably persuade Iraq to limit its increase in production so as to allow larger Saudi output.

Table 1
Demand For and Capacity of OPEC Oil Production

(Million b/d)

	OPEC Outside Middle East	Iran and Iraq		Southern Gulf		Total OPEC
1982						
Production	6.7	2.9		9.7		19.3
Capacity	9.5-10	7-8		16		32-34
	OPEC Outside Middle East	Iran and Iraq		Southern Gulf		Total Opec
		If Iran-Iraq War Continues	If Iran-Iraq War Ends	If Iran-Iraq War Continues	If Iran-Iraq War Ends	
1985 Projected						
Baseline	9	4	7	6-7	3-4	19-20
\$30	9	4	7	7-9	4-6	20-22
\$25	9	4	7	9-12	6-9	22-25
\$20	9	4	7	12-16	9-13	25-29
\$15	9	4	7	16-22	13-19	29-35

- With oil at \$20 per barrel the growth of demand would more than cover the entire unused capacity of OPEC outside the Persian Gulf, which would leave the Saudis in a position to easily fix the price with help only from its southern Gulf associates, while raising their output.
- At \$15 per barrel oil demand would approach capacity levels in all of OPEC, including Saudi Arabia. The expectation of imminent oil shortages as demand soared during 1983-84 would create strong upward pressure on oil prices long before OPEC capacity was reached.

These estimates reflect our evaluation of the various factors affecting oil demand and supply. Some of the major estimates that drive our judgments on the impact of lower oil prices are:

- Lower oil prices would considerably stimulate economic growth in OECD (Organization for Economic Cooperation and Development) countries, government macroeconomic and energy policies permitting. Within three years GNP in OECD countries

would be raised by about 2 percent for every \$5 per barrel decline in oil prices. GNP growth in turn would raise energy consumption.

- Energy conservation and the substitution of oil for other forms of energy would continue on a substantial scale as a result of earlier large oil price rises.
- Declines in oil prices would stimulate energy and especially oil use. The impact of price declines to below about \$25 per barrel would more than offset the impact of the longer term conservation and substitution momentum on oil consumption in the next few years, but would not reverse most conservation gains of the past decade.
- For every \$5 per barrel decline in oil prices, oil demand by OECD countries would increase on the average by about 2.5 million b/d, on an accelerating curve.
- Demand for other forms of energy will increase substantially in any event because of the low cost of coal and the low marginal cost of nuclear power.

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- Demand for OPEC oil will closely parallel OECD oil demand, other factors being small and offsetting.

Although we have tried to take a wide range of possibilities into account in this analysis, major sources of uncertainty remain. These include:

- The rate of growth of the OECD economies in the upswing of this business cycle, which can be strongly influenced by government and central bank policies.
- The strength of the energy conservation and inter-fuel substitution actions already taken or in train.
- The extent to which changes in taxes and regulations allow oil price declines to reduce the prices consumers pay for energy products.

Compensating taxes on oil products imposed by consuming country governments would dampen the increase in oil demand only if the proceeds were not spent—that is, if they were used to reduce budget deficits. In that event, OECD oil demand, and demand for OPEC oil, would be reduced slightly more than in proportion to the percentage of the crude oil price decline being offset by higher oil product taxes. For example, if new oil product taxes equivalent to 25 percent of the decline in crude oil prices were imposed by all OECD countries, the impact of the crude oil price decline on oil demand would be reduced by about 30 percent—or by about 0.7 million b/d for every \$5 drop in the price of crude oil. It is unlikely that oil tax offsets would exceed 25 percent of a crude oil price drop for the OECD as a whole. Only gasoline, diesel oil, and household heating oil, which together make up about one-half of a barrel of crude oil in the OECD, are generally subject to substantial taxes. Moreover, many OECD countries—for example, West Germany—are unlikely to impose tax offsets.

In the longer term—a period beyond the three years considered in this analysis—these uncertainties in some respects become even greater, and additional

large uncertainties—concerning non-OPEC oil production, for example—come into play. The trend toward energy conservation and substitution, which was a result of earlier oil price increases, is bound to subside, an expectation that leads most analysts to project an increasing demand for oil by the end of the decade, whether or not oil prices should fall. Lower oil prices would clearly accelerate this trend while discouraging the growth of non-OPEC oil production. Probably the only way that oil supply could expand enough to meet demand in the latter part of the decade at prices below \$25 would be for Saudi Arabia and the other southern Gulf countries to shift to a policy of expanding production and productive capacity. This would require a complete about-face in policies that have been in effect since the early 1970s, and we know of no support for such changes in these countries.

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Appendix

Factors Affecting the Oil Market

The various factors affecting the demand for OPEC oil under alternative oil price scenarios were projected using a combination of expert judgment and econometric modeling. The CIA econometric link model, which consists of medium-sized econometric models for the principal economies and groups of non-Communist countries, including fairly elaborate energy sectors, was used to obtain information on the sensitivity of different variables to oil price declines of various magnitudes. Checks on the reasonableness of the results were made wherever possible.

The projection of demand for OPEC oil is driven predominantly by OECD demand. Other demand and supply factors are believed to have a small impact.

The projections are for the year 1985 using 1982 as the base. There is probably a firmer basis for estimating such a midterm (three years) impact than a short-term (one year) impact, which is strongly influenced by volatile factors such as inventory change, weather, and the phasing of the business cycle. Unfortunately, little is known about long-term impact because sufficient data for reliable econometric calculations do not exist and the impact of oil price changes becomes indistinguishable from the general effects of structural economic change.

The methodology used to project demand for OPEC oil involves the following steps:

(1) Estimating a baseline projection, with real oil prices remaining at the 1982 level of about \$33 per barrel. The baseline projection, the elements of which are shown in table 2, includes:

- A projected average rate of growth of 2.7 percent a year in OECD GNP.
- A continued but slowing decline in the energy/GNP ratio, by 4.5 percent over the three years.
- A continued but slowing decline in the share of oil in total OECD energy consumption, from about 46 percent in 1982 to 44 percent in 1985.

(2) Estimating the impact of lower real oil prices (\$30, \$25, \$20, and \$15) on baseline projections for GNP, the energy/GNP ratio, and the share of oil in energy consumption, using the CIA link model and alternative

Table 2
Energy Conservation and Substitution in the OECD:
Recent Trends and Baseline Projection

	1979	1980	1981	1982	1983 ^a	1984 ^a	1985 ^a
GNP growth (annual percent change)	3.8	1.1	1.1	0.4	-2.7 ^b	2.7 ^b	-2.7 ^b
Energy/GNP ratio (annual percent change)	-1.1	-4.0	-3.8	-2.0	-1.8	-1.5	-1.2
Share of oil in total energy (percent)	51.6	49.3	47.2	45.9	45.0	44.4	44.0

^a Projected.

^b Average annual rate over three years.

Table 3
Impact of Oil Price Scenarios on Factors Affecting
OECD Oil Demand Between 1982 and 1985

	GNP Growth (percent)	Energy/GNP Ratio (percent change)		Share of Oil in Energy Consumption (percent change)	
		High Impact	Low Impact	High Impact	Low Impact
Baseline	8.5	-4.5		-2	
\$30	9.2	-2.5	-3.5	0	-1
\$25	11.0	0.5	-1.5	2	0
\$20	13.0	3.5	-0.5	4	1
\$15	15.5	6.5	2.5	6	2

tive assumptions (table 3). Specifically, every \$5 per barrel decline in oil prices:

- Raises OECD GNP by about 2 percent over the three-year period.
- Raises the OECD energy/GNP ratio 2-3 percent (the larger impact is calculated from the model).
- Raises the share of oil in total OECD energy consumption by 1-2 percent (again, the larger impact is calculated from the model).

This methodology allows two kinds of price effects to occur simultaneously: (a) the long-term impact of past oil price increases, which continue to stimulate energy conservation and substitution for oil as reflected in the baseline forecast; and (b) the reverse shorter term impact of further oil price increases, which encourage the use of energy, and oil in particular. These two types of impacts offset each other near an oil price of \$25. At very low oil prices, such as \$15, the energy/GNP ratio and the share of oil in energy consumption might return to the 1980 or 1981 levels by 1985, but earlier conservation and substitution gains would not be reversed.

(3) OECD demand for total energy, oil and other types of energy, is projected to 1985 by:

- Projecting energy demand with a constant energy/GNP ratio for each price scenario.

- Reducing or increasing these projections on the basis of projected changes in energy/GNP ratio, which yields estimated OECD demand for energy.
- Multiplying estimated OECD energy demand by the projected shares of oil in total energy consumption.

The resulting projections are shown in table 4. Oil demand rises more rapidly than energy demand at the lower oil prices because of the increase in the share of oil in total energy consumption. Even so, demand for other forms of energy increases over the three-year

Table 4 (Million b/d)
Projected OECD Demand for Energy

Oil	Other	Total Energy	Energy
1982 (estimated)	33.6	39.7	73.3
1985 (projected)			
Baseline	33	43	76
\$30	34	42-44	76-78
\$25	35-38	44-45	80-82
\$20	37-41	44-46	83-85
\$15	40-45	45-47	87-90

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period for all scenarios. Indeed, it increases somewhat more at the lower price of oil, indicating that the impact of higher GNP on demand for other forms of energy is greater than the impact of substitution in favor of oil.

(4) The impact of all factors affecting demand for OPEC oil is summarized in table 5. These factors include oil demand in non-OPEC LDCs, changes in oil stocks in comparison with the abnormal 1982 drawdowns, OECD and LDC oil production, and the net exports of the central planned economies. The demand for OPEC oil increases slightly more than OECD oil demand. The other factors are small.

The projections of oil demand in tables 4 and 5 appear consistent with available projections by oil companies, which generally assume an oil price of about \$30 per barrel. One oil company projects an increase of 1.2 million b/d between 1982 and 1983 in OECD oil demand and a decline of 0.6 million b/d in US oil demand. Two other companies project increases in US demand of 3 million and 4 million b/d, respectively. All these projections call for large declines in US gasoline demand (by 5-7 million b/d).

The following sections analyze some of the main elements of the projections in more depth.

Macroeconomic Impact

Estimates of the impact of declines in oil prices on real GNP often range widely in the first year following a price decline, but tend to converge in the second and third years. As a general rule, a \$5 per barrel decline in the price of oil probably can be expected to raise OECD GNP by about 2 percent over a three-year period. Although some estimates are lower, this is probably due to not capturing enough of the interactions within the world economy or to the use of restrictive assumptions about government macroeconomic policies.

It is important to remember that lower oil prices tend to raise GNP in OECD countries in at least three ways which are strongly affected by government fiscal and monetary policies:

- By reducing inflation, which permits given money incomes to purchase more goods and services if

Table 5
Estimated Impact of Oil Price Scenarios on the Oil Market
(Increments in Oil Demand and Supply Between 1982 to 1985)

(Million b/d)

	Oil Price Scenarios				
	\$33 (Baseline)	\$30	\$25	\$20	\$15
Factors affecting oil demand					
OECD oil demand	-0.5	0	1.5 to 4.5	3.5 to 7.5	6.5 to 11.5
LDC oil demand	0.5	0.5	1.0	1.5	2
Stock changes	1.0	1.0	1 to 1.5	1.5	1.5
Total non-Communist countries' demand	1.0	1.5	3.5 to 7	6.5 to 10.5	10 to 15
Factors affecting oil supply					
OECD oil production	0	0	0	-0.5	-1.0
LDC Oil Production	1.5	1.5	1.5	1.5	1.5
CPE net exports	-0.5	-0.5	-0.5	0	0
Total non-Communist countries' supply	1.0	1.0	1.0	1.0	0.5
Demand for OPEC oil	0	0.5	2.5 to 6	5.5 to 9.5	9.5 to 14.5

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government monetary and fiscal policies are accommodating.

- By reducing the value of oil imports without a compensating decline in exports. It took several years for the wealthier OPEC countries to bring their spending into line with the enormous increase in their incomes when oil prices surged—four years after the 1973 price increase and less than two years after the 1979-80 increase. The adjustment period involving import cuts after oil price declines will probably be no longer than three years. In the meantime, the wealthier countries will let foreign exchange assets fall and the poorer countries will borrow when they can.
- By expanding the OECD economies' productive capacity. A lasting decline in the real price of oil will bring smaller declines in energy prices. To the extent that energy can be thought of as a factor of production, lower real energy prices will stimulate the substitution of energy for labor and, in the long run, will increase the level of potential GNP. This supply-side impact presumably continues to operate beyond the period when the impact on aggregate demand has been spent.

All three effects are highly sensitive to government policies. Our projections assume that OECD governments hold the growth of money supply and budget expenditures constant in nominal terms and discount rates constant in real terms. With lower inflation, these policies accommodate considerably more real growth.

Energy Conservation

The impact of real energy price changes on the consumption of energy is difficult to assess. There is general agreement that the short-term (one year or so) price elasticity of demand is small (perhaps about -0.1 to 0.2). There is also something like a consensus that the medium-term price elasticity of demand for energy (over a three- or four-year period) is in the vicinity of -0.3 to -0.4. However, we know very little about the long-term price elasticity or how substantial and long-lasting the continued effects of an energy price change may be after the first three or four years.

What makes projections of energy consumption particularly difficult at this time is that we are in a period of oil price declines following nearly a decade of rapid oil price increases. Consequently, we have to assess to what extent continued energy conservation measures undertaken when prices were rising will offset the short-term stimulus to energy use resulting from recent or prospective price drops.

If real oil prices remained constant, additional energy conservation probably would occur and consequently the energy/GNP ratio would continue to decline, although at a slowing rate, for several years. The major investments undertaken in recent years to conserve energy will continue to have an impact on energy consumption. For example, new US automobiles are far more fuel-efficient than older models, therefore, the average fuel efficiency of the stock of automobiles is rising rapidly. Even as people begin to buy larger cars, average efficiency will continue to increase for years. The same is true in many other parts of the economy. As oil prices decline, however, some conservation measures will be reversed. For example, people probably will not only buy larger cars, but will drive them more miles; they will turn up their thermostats; and industry will become less concerned about reducing its energy costs.

Conservation is driven not by the price of crude oil but by the prices paid by final customers of energy. The impact of changes in crude oil prices on users in industry and electric power generation is generally direct because transport, processing, and distribution costs are small relative to the price of crude oil and there are few taxes on these uses of oil products. In the case of gasoline, diesel fuel, and, to a lesser extent, home heating oil, taxes are substantial in the United States and large in Europe and Japan, making declines in the prices of these products much less than proportional to declines in the price of crude oil, unless governments take action to raise taxes. Natural gas prices have lagged far behind the increase in oil prices in the 1970s in both the United States and Western Europe. With the price gap much diminished, large declines in oil prices would probably be

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reflected fairly quickly in lower prices for natural gas; in the United States the impact would depend in part on the extent and nature of decontrol. Coal prices are likely to move in the general direction of oil prices, but much more slowly. Electricity rates reflect a composite of the costs of the fuel inputs but often only after a substantial lag. Overall, every 10-percent decline in oil prices can be expected to bring about a 4- or 5-percent decline in fixed energy prices in OECD countries, assuming no change in tax rates or government controls.

Future energy demand will be affected not only by the actual course of prices, but also by price expectations. If price declines are expected to lead to even greater price declines, energy conservation will be discouraged. On the other hand, if price declines are expected to be temporary, substantial energy conservation may continue.

On balance, large oil price declines could be expected to slow greatly or even halt additional energy conservation, but it would take many years for much of the large conservation of the past decade to be reversed.

Interfuel Substitution

The prevalence of government controls over, and taxes on the use of, various types of fuels makes it exceedingly difficult to estimate the impact of oil price declines on interfuel substitution. The long-term trends are clear: just as the declining relative price of oil brought about a steadily increasing share of oil in the consumption of total primary energy in the 1950s and 1960s, so the large relative oil price increases since 1973 have brought about a decline in the oil share. Between 1978 and 1982 the share of oil in OECD energy consumption fell from more than 54 percent to about 46 percent. The decline in the oil share was especially rapid in 1980-81, but slowed somewhat in 1982. In the absence of further large price changes, it is reasonable to expect a continued, although slower, decline in the next few years.

The impact of declines in oil prices would work counter to this long-term trend. Although it is unlikely that many plants now using coal would be converted back to oil, this could take place where short-term

options exist. If oil prices fall below \$25 and the new lower prices are viewed as sustainable, plans for new coal-fired power plants could be scrapped or delayed. According to industry sources, oil prices of \$27 per barrel in Western Europe in 1985 and \$28 per barrel in 1990 are required to make coal a break-even proposition in new electric power plants—the principal market for coal.

The impact of lower oil prices on gas demand would be strongly affected by the deregulation process in the United States and is difficult to predict. In Europe, gas prices are being closely tied to the price of oil, but, in a soft market, are likely to end up nearer the top than the bottom end of the barrel. This would make gas competitive mostly as a household fuel, making oil the dominant industrial fuel.

Demand for nuclear power will probably be little affected by the price of oil in the near or medium term because the marginal cost of nuclear power is low.

Non-OECD Sources of Oil Demand

Demand for oil in less developed countries will be driven partly by income growth and partly by how strongly major LDCs push energy conservation and substitution programs, including raising the prices of domestic oil products closer to market level. Following decades of rapid growth, LDC oil demand has leveled off in the past year or so and is likely to be weak for at least the next two years because of the impact of world recession and severe financial constraints in many countries. A large decline in oil prices, however, by stimulating OECD economic growth, would result in higher volume and prices for LDC exports, higher incomes, and increased demand for oil.

The rapid growth of oil consumption in OPEC countries was a significant factor affecting world oil demand in the past decade. Under the projected conditions of decreasing incomes, however, further growth of OPEC oil consumption will probably be small—less than 0.5 million b/d.

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Another important source of additional oil demand will be the inevitable shift from the substantial reductions in oil stocks in 1982 (nearly 1 million b/d) to more normal stocking patterns in future years.

Impact on Oil Supply

The impact of oil price declines on the supply of oil to non-Communist countries would be small. Although low oil prices probably would mean substantial cuts in exploratory drilling, the impact on oil output would not be felt until the latter part of the decade at the earliest. Variable oil production costs are generally too low to justify shutting in wells on a substantial scale even with prices of \$15 to \$20 per barrel. In some areas, however, notably the North Sea, new development drilling may be unprofitable at prices much below \$25 per barrel unless tax rates are substantially reduced. This could mean some reduction in output by the mid-1980s.

In the case of some non-OPEC LDCs, development of new fields would be slowed or halted by a large drop in oil prices. On the other hand, Mexico would have a strong incentive to increase production of known fields as rapidly as possible to minimize the decline in its oil earnings.

The trend in the net oil exports of the centrally planned economies is expected to be downward as Soviet and East European demand slowly rises while Soviet export possibilities are steadily squeezed by slow increases in domestic oil demand and a stable level of oil production. Moscow probably cannot shift much more of its oil exports from Eastern Europe to the world market unless Eastern Europe is able to increase its oil imports from non-Communist countries. This would mean little change in the non-Communist countries' balance. Should oil prices fall to very low levels, however, the USSR might ration oil supplies to domestic consumers even more severely to minimize the decline in hard currency earnings.

The OPEC Supply Response

OPEC oil production has been far below productive capacity since 1979. In 1982 production was only 55 to 60 percent of estimated capacity for OPEC as a whole, about 40 percent of capacity in Iran and Iraq,

largely because of the war, some two-thirds of capacity in OPEC countries outside the Middle East, and about 60 percent of capacity in the southern Gulf countries. In February 1983 the impact of warm weather and large inventory reductions cut OPEC oil production to less than half of capacity.

The existence of massive excess capacity in OPEC leaves a great deal of room for an expansion of demand during the next few years. However, even a growth of demand for OPEC oil that constitutes only a fraction of OPEC excess capacity may be sufficient to cause upward pressure on prices. It is often forgotten that OPEC does not have to operate as an effective cartel for oil prices to be managed effectively. OPEC has never operated as a cartel in the sense of achieving any effective agreements on production controls. Where oil price declines have been moderated or prevented, this has been due almost exclusively to a willingness by Saudi Arabia and its associates in the southern Gulf to act as residual suppliers, and consequently to cut production when demand fell.

Recent declines in demand have been so large that Saudi production has fallen to less than 4 million b/d, a rate that is difficult for the Saudis to accept for long. The attempt by Saudi Arabia to prevent a further reduction in its market share by forcing others to limit output is responsible for the current crisis in OPEC. The Saudis, however, have shown considerable flexibility in production policy. Although there are probably limits to how far they will let their production decline, they can afford to produce for some time at levels that fall well short of current expenditure needs because they are able to draw on enormous foreign exchange assets if necessary. Moreover, the Saudis are concerned that a price war would create major threats to political stability in the Middle East, including possibly a serious military threat from Iran to the southern Gulf countries. These real concerns, coupled with a general predilection toward avoidance of risk, make it highly unlikely that the Saudis will resort to a price war except in extreme circumstances, and, if pushed to the wall, the other OPEC countries understand how much they stand to lose by a large price decline.

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The key question for the future is how much difficulty the Saudis, with the help at least of the southern Gulf oil producers, will have in controlling the price of oil. If demand for southern Gulf oil falls, assuming no cooperation from any other OPEC countries, there will be strong downward pressure on oil prices. However, if demand for Southern Gulf oil rises, or remains around the 1982 level, the prices can be maintained or increased, depending on what the Saudis perceive to be a sustainable medium- or long-term price.

In this respect, the Saudis appear to regard a price in the \$25 to \$30 per barrel range to be consistent with medium- to long-term supply and demand trends, considering the incentives for conservation and substitution and the costs of alternative fuels.

How difficult Saudi control of the oil market will be depends not only on the growth of oil demand but on when and under what circumstances the Iran-Iraq war ends. Currently Iran and Iraq together are able to produce only about 4 million b/d, 3-4 million b/d less than they probably can produce beginning several months after the end of the war.

To put the OPEC situation in perspective:

- Increased oil demand of 3 million b/d would enable Iran and Iraq to produce at wartime capacity and the OPEC countries outside the Middle East to raise production to near their productive capacity, without reducing demand for southern Gulf oil.
- An increase in demand of 6-7 million b/d would cover, in addition, the probable peacetime capacity of Iran and Iraq.
- An increase in demand of 12 million or 13 million b/d would force the southern Gulf countries to produce above their preferred levels.
- Beyond this, further increases in demand would begin to press against the capacity even of the southern Gulf countries.

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